INPLASY PROTOCOL

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None declared.

Effects of aerobic exercise on fatigue in patients with hematopoietic stem cell transplantation: a meta analysis

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Review question / Objective: **This systematic review aims to analyze the current literature and explore the best time and duration of aerobic exercise to reduce fatigue in patients undergoing hematopoietic stem cell transplantation. Patients: patients undergoing hematopoietic stem cell transplantation; Intervention: aerobic exercise; Outcome: fatigue.**
Condition being studied: **Studies have shown that aerobic exercise can stabilize the body function level of patients undergoing hematopoietic stem cell transplantation, alleviate the decline of body function after transplantation, and promote the physical and mental recovery of patients. However, the effectiveness of different time and time of aerobic exercise in relieving fatigue of patients undergoing hematopoietic stem cell transplantation is inconsistent.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 31 May 2021 and was last updated on 31 May 2021 (registration number INPLASY202150110).

INTRODUCTION

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METHODS

Participant or population: ≥ 18 diagnosed with hematopoietic stem cell transplantation with malignant blood disease.

Intervention: The experimental group take part in aerobic exercise on the basis of routine nursing.

Comparator: The control group take routine nursing or took part in exercise after the end of the experimental group.

Study designs to be included: RCT.

Eligibility criteria: RCT studies were included. Animal experiments, cases, reviews, conferences, news, repetitive or missing data, incomplete data, non English and Chinese literature were excluded.

Information sources: We searched the Pubmed, Web of science, Cochrane Library, JBI to identify suitable articles published in English. We also searched CNKI, SinoMed, Wanfang Database, VIP to find suitable studies in Chinese.

Main outcome(s): Fatigue.

Data management: Two reviewers screened the literatures according to the inclusion and exclusion criteria, extracted the data and cross checked, excluded the obviously unrelated literatures, and read the full text of the literatures that may meet the inclusion criteria. In case of disagreement, the two parties shall make a decision through consultation and seek the opinions of a third party if necessary.

Quality assessment / Risk of bias analysis: Two evaluators used the items provided by JBI standard to evaluate the quality of documents. The evaluation contents include: whether the random grouping method is used to the research object; Whether the allocation is hidden or not; Whether the baseline between groups is comparable; Whether blind method is applied to the research object; Whether blind method is applied to the intervener; Whether blind method is applied to the result evaluator; Whether the results are the same as the intervention measures to be verified; Whether the follow-up is complete, if not, take measures to deal with the failure of the visit; Whether all randomly assigned subjects are included in the result analysis; Whether the same method is used to evaluate the result index of each group; Whether the evaluation method of the outcome index is credible; Whether the data analysis method is appropriate; Whether the research design is suitable and whether there is any difference between the implementation of research and data processing from the standard RCT; All evaluation indicators can be rated as yes, no, unclear and not applicable.

Strategy of data synthesis: Revman 5.3 software provided by Cochrane Collaboration Network was used for data analysis. The weighted mean difference (WMD) or standardized mean difference (SMD) were used as the effect index. Firstly, the heterogeneity of the included studies was tested, and all the effects were expressed by point estimate and 95% CI. When I2 is less than 50%, it is considered that there is no significant statistical heterogeneity, and the fixed effect model is used. When I2 is more than 50%, it is considered that there is statistical heterogeneity among studies, and the random effect model should be used.

Subgroup analysis: If it was clinical and methodological heterogeneity, subgroup analysis was performed according to the specific situation.

Sensitivity analysis: When possible, we will conduct a sensitivity analysis to explore the impact of the trial's risk of bias on the preliminary results. These analyses will exclude lower-quality trials and repeat meta-analysis based on sample size and insufficient data to assess quality and robustness when significant statistical heterogeneity occurs.

Country(ies) involved: China.

Keywords: Blood system; Tumor; Hematopoietic stem cell transplantation; Fatigue; Aerobic exercise; Meta analysis; Subgroup analysis.

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